

REMARKS/ARGUMENTS

Reconsideration of this application is requested. Claims 1-11 are in the case.

I. ELECTION/RESTRICTIONS

The election of Group I is affirmed. Claims 10 and 11 are withdrawn from consideration.

II. THE ANTICIPATION REJECTION

Claims 1-9 stand rejected under 35 U.S.C. §102(b) as allegedly anticipated by EP 1043064 to Ellis et al. That rejection is respectfully traversed.

As claimed, the invention provides a catalyst composition for the oxidation of ethane and/or ethylene to acetic acid. The composition comprises in combination with oxygen the elements molybdenum, vanadium, niobium and gold in the absence of palladium according to the empirical formula: $Mo_aW_bAu_cV_dNb_eY_f(I)$, wherein Y is one or more elements selected from: Cr, Mn, Ta, Ti, B, Al, Ga, In, Pt, Zn, Cd, Bi, Ce, Co, Rh, Ir, Cu, Ag, Fe, Ru, Os, K, Rb, Cs, Mg, Ca, Sr, Ba, Zr, Hf, Ni, P, Pb, Sb, Si, Sn, Tl, U, Re, Te and La; and a, b, c, d, e and f represent the gram atom ratios of the elements such that: $0 < a \leq 1$; $0 \leq b < 1$ and $a + b = 1$; $10^{-5} < c \leq 0.02$; $0.4 \leq d \leq 0.865$; $0.135 \leq e \leq 0.23$; and $0.55 \leq d + e \leq 1$; and $0 \leq f \leq 2$.

Ellis does not disclose the invention as claimed. Ellis describes a catalyst composition for the oxidation of ethylene and/or ethane. The catalyst composition comprises elements Mo, Nb, V, Au, optionally W, in the absence of Pd, and optionally component Y, selected from Cr, Mn, Ta, Ti, B, Al, Ga, In, Pt, Zn, Cd, Bi, Ce, Co, Rh, Ir,

Cu, Ag, Fe, Ru, Os, K, Rb, Cs, Mg, Ca, Sr, Ba, Zr, Hf, Ni, P, Pb, Sb, Si, Sn, Tl, U, Re, Te and La. Vanadium is present in the Ellis catalyst composition in gram atom ratio "d" and niobium is present in the catalyst composition in gram atom ratio "e", where $0 < d \leq 2$ and $0 < e \leq 1$.

There is no disclosure in Ellis of a catalyst composition comprising the combination of vanadium in a gram atom ratio of between 0.4 and 0.865 and niobium in a gram atom ratio of between 0.135 and 0.23. Moreover, there is no disclosure in Ellis of a catalyst composition wherein the sum of the respective gram atom ratios of vanadium and niobium is between 0.55 to 1.

In light of the above, it is believed that the present invention as claimed is not anticipated by Ellis. Withdrawal of the anticipation rejection is respectfully requested.

While no obviousness rejection is presently raised, it is believed that Ellis also does not give rise to a *prima facie* case of obviousness of the presently claimed invention. The present invention provides a catalyst comprising molybdenum, vanadium, niobium and gold in combination with oxygen, in which the amounts of vanadium and niobium are such that an increased selectivity to acetic acid (at the expense of ethylene) is achieved in the oxidation of ethylene/ethane to acetic acid and ethylene. In Table 1 (page 11 of the application), catalysts B and C of the present invention provide selectivity to acetic acid of 74.5 and 80.8 respectively and ethylene selectivity of 12 and 0 respectively (at ethane conversion of 4.6 and 41%) whereas, at a comparable ethane conversion (4.5%), comparative catalyst 3 achieves only 51.3% selectivity to acetic acid and a selectivity to ethylene of 31.6%.

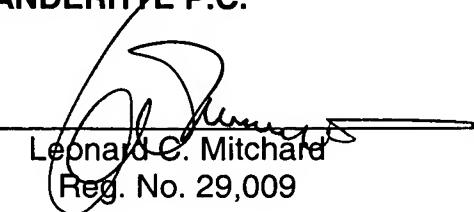
ELLIS
Appl. No. 10/530,715
May 2, 2008

Thus, the catalysts according to the invention are significantly more selective to acetic acid under comparable reaction conditions. Such selectivity towards acetic acid could not have been predicted by one of ordinary skill based on Ellis. The present invention as claimed is therefore patentable over Ellis.

Favorable action is awaited.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: 

Leonard C. Mitchard
Reg. No. 29,009

LCM:Iff
901 North Glebe Road, 11th Floor
Arlington, VA 22203-1808
Telephone: (703) 816-4000
Facsimile: (703) 816-4100